

Rubber Band Resistance Exercise

Some features of bands include:

- **Bonded Ends:** A ¼-inch strip of rubber is bonded at the ends to make a continuous band. This joint is a weak spot that can break during exercise.
- **Extruded Rubber:** Strands of rubber are wound together like spaghetti, making it very strong. The bonded ends, though, are a weak spot.
- **Over-layered:** A strip of rubber is overlapped and bonded into a continuous band. The center of the overlapped section is very strong, but both ends are weak.
- **Layered on Mandrills:** Bands are built in layers, forming a continuous band. The first and last layers should finish on different planes, at least 3 inches apart. This forms a one-piece band with no weak spots.

Exercises

Rubber band exercises can be used for a variety of drills, such as:

- Running and agility side-to-side drills
- Power exercises such as squat jumps and conventional resistance exercises.
- Traditional exercise such as chest press, arm curl, and squats.
- As always, safety is the primary consideration. Consider band strength.

Safety Questions

Before using a resistance band or rubber band machine, ask a number of questions, especially when there are multiple users. Rubber bands should be checked at rest and then when stretched to their usable length. Examine them carefully, asking:

- Is the resistance smooth and flexible in use?
- Are there signs of wear from repetitive use, including cracks or worn endings?
- Are there signs of weather exposure—such as sun, water or cold—making the rubber cracked or pale?

A Complete Physical Activity Program

A well rounded program of physical activity includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps to maintain or improve cardiorespiratory and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than sporadic, high-intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSM's physical activity recommendations for healthy adults, updated in 2007, recommend at least 30 minutes of moderate-intensity physical activity (working hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation. Typical aerobic exercises include walking and running, stair climbing, cycling on a stationary or moving bike, rowing, cross-country skiing, and swimming.

In addition, strength training should be performed a minimum of two days each week, with 8-12 repetitions of 8-10 different exercises that target all major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

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Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone and some programs may in fact result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.



Staying Active Pays Off!

Those who are physically active tend to live longer, healthier lives. Research shows that even moderate physical activity—such as 30 minutes a day of brisk walking—significantly contributes to longevity. A physically active person with such risk factors as high blood pressure, diabetes or even a smoking habit can get real benefits from regular physical activity as part of daily life.

As many dieters have found, exercise can help you stay on a diet and lose weight. What's more, regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

The First Step

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine your suitability for beginning an exercise routine or program.

- Has your doctor ever said that you have a heart condition or that you should participate in physical activity only as recommended by a doctor?
- Do you feel pain in your chest during physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance because of dizziness? Do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your physical activity?
- Is your doctor currently prescribing drugs for your blood pressure or a heart condition?
- Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more questions, if you are over 40 years of age and have been inactive, or if you are concerned about your health, consult a physician before taking a fitness test or substantially increasing your physical activity. If you answered no to each question, then it's likely that you can safely begin fitness testing and training.

About Rubber Band Resistance Exercise

Originally used to train older adults in nursing homes, flexible bands now provide exercise options for beginning to advanced exercisers and athletes. The more you know about flexible bands, rubberized resistance cords and the machines that use them, the better you can choose the method that's right for you. It's all about finding the resistance that matches the exercise you need.

Elastic bands offer no resistance at first, then more and more resistance as they are stretched to their limit. The resistance changes again as the bands return to resting position. This pattern—changing from extension to return—is known as hysteresis.

Rubber bands, by their nature, offer very little resistance when first stretched (for example, over the first 10-30 degrees of their range of motion.) It is important to feel resistance early in the stretch—more easily accomplished with single rubber bands than with some resistance machines.

Strength Curves

Every exercise can be illustrated by a curve showing the force used over a range of motion. The three primary strength curves are:

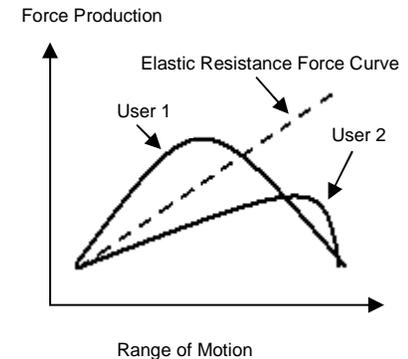
- Ascending (Force increases over the range of motion)
- Bell (Force is greatest in the middle of the range of motion)
- Descending (Force decreases over the range of motion)

Variations among exercises and individuals can affect the shape of these curves as well as the timing and degree of force used in each exercise. Exercise loading should match the strength curve to ensure that appropriate force is applied to the muscle.

Take, for example, arm curl exercises using elastic bands. Too much resistance would prevent smooth motion through the entire range. Resistance that is below the starting strength of the arm curl movement allows normal repetition of the movement.

It is important to be able to choose resistance to suit the exercise. For example, chest presses need more resistance than arm curls.

The following graph shows the resistance of an elastic band (dotted line) compared with the strength curves of two different users. Greater strength gives User 1 force greater than the band's resistance, while User 2 has insufficient force throughout the entire range of motion. Neither user is well matched with this particular band.



Choosing Resistance Bands

When choosing from among the wide variety of rubberized resistance equipment available, ask:

- What exercises will I perform with the resistance bands? This tells you what range of resistance you'll need to adequately develop the muscle.
- What are the bands made of? Natural rubber latex, with its superior strength and elasticity, makes the best bands. Synthetic rubber is reinforced with additives that can cause the band to become harder and less elastic.
- How are the bands constructed?
- Understanding how bands are made can help you determine quality of construction and how they can be used in a variety of exercises. While any rubberized band provides resistance, heavier use requires a more durable product.